

REMARKS

The Applicant thanks the Examiner for the careful consideration of this application. Claims 1-11 and 13-18 are currently pending. Claims 1 and 11 have been amended. Claim 4 was previously withdrawn. Claim 12 has been cancelled, without prejudice. New claims 13-19 have been added. Based on the foregoing amendments and the following remarks, the Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

I. The Office Action rejected claims 1, 6, 8, and 12 under 35 U.S.C. § 103(a) as being unpatentable over Kojima et al. (U.S. Patent No. 4,312,559) in view of Case '061 (U.S. Patent No. 4,455,061). Claim 12 has been cancelled, without prejudice. Claim 1 is the sole independent claim. The Applicant respectfully submits that independent claim 1 is patentable over these cited references for at least three reasons.

First, neither Kojima nor Case '061 discloses or suggests "at least two interference patterns located on the holographic optical element, wherein each interference pattern is formed through simultaneous exposure of the element to the fan-shaped reference wave front generated by the monochromatic and coherent laser light source and a parallel partial wave front generated by the same monochromatic and coherent laser light source," as recited by claim 1. Claim 1 recites that each interference pattern is formed using a reference wave front and a partial wave front. For example, in the case of a holographic optical element having two interference patterns,

the first interference pattern would be formed using the reference wave front and a first partial wave front; and the second interference pattern would be formed using the reference wave front and a second partial wave front. Nowhere does Kojima disclose or suggest such an arrangement.

Referring to Kojima specifically at column 4, lines 40-50, and Fig. 7, Kojima discloses, at best, a *single* interference pattern formed using a reference wave front and a *single* partial wave front B'. Case '061 does not provide the missing disclosure.

Second, neither Kojima nor Case '061 discloses or suggests that if the parallel partial wave fronts are virtually extended through the holographic optical element, the parallel partial wave fronts intersect behind the element in a center of a measuring field, as recited by claim 1. This is shown, for example, in Figure 3 of the present application, where the three partial wave fronts 15, 16, and 17 intersect one another at the intersecting point 18. Contrary to the allegations in the Office Action, Figure 12 and/or column 12, lines 8-39 of Case '061 do not disclose or suggest that *multiple* parallel partial wave fronts intersect behind the hologram 52. Rather, Case '061 discloses that the lens 135 (misabeled as 136 in Fig. 12) simply focuses a *single* reference beam 132a on a scan spot 136 behind the lens 135. (See, e.g., Case '061 at 12:17-27, Figs. 11, 12.) The reference beam 132a does not comprise multiple parallel partial wave fronts, as claimed. As acknowledged by the Office Action on page 4, Kojima does not provide the missing disclosure.

Third, solely to expedite prosecution of this application, claim 1 has been amended to recite that "when the holographic optical element is used in a measuring apparatus, a fan-shaped wave front projected onto the holographic optical element is diffracted by the at least two interference patterns to form parallel partial wave fronts that intersect in the center of the measuring field." An exemplary

embodiment of the claimed configuration is shown in Figure 4 of the present application, where the interference patterns 25, 27 diffract the wave front 14' to form partial wave fronts 15 and 17 that intersect one another in the center of the measuring field 18. Neither Kojima nor Case '061 discloses or suggests a holographic optical element with the claimed configuration.

Claim 1 is therefore submitted to be patentable over any reasonable combination of Kojima and Case '061 for at least the three reasons discussed above. Claims 6 and 8 depend from claim 1, and are patentable for at least the same reasons.

II. The Office Action rejected claims 2, 3, and 5 under 35 U.S.C. § 103(a) as being unpatentable over Kojima in view of Case '061, and further in view of Case '037 (U.S. Patent No. 4,547,037).

Claims 2, 3, and 5 depend from claim 1, which, as demonstrated above, is patentable over Kojima and Case '061. Case '037 does not remedy the deficiencies of Kojima and Case '061. Therefore, claim 1, as well as dependent claims 2, 3, and 5, are patentable over Kojima, Case '061, and Case '037.

III. The Office Action rejected claims 7 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Kojima in view of Case '061, and further in view of Käser (U.S. Patent No. 4,955,694).

Claims 7 and 9-11 depend from claim 1, which, as demonstrated above, is patentable over Kojima and Case '061. Käser does not remedy the deficiencies of Kojima and Case '061. Therefore, claim 1, as well as dependent claims 7 and 9-11, are patentable over Kojima, Case '061, and Käser.

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New Claims 13-19

New independent claim 13, and dependent claims 14-19, have been added to define further aspects of the invention. The Applicant respectfully requests consideration and allowance of new claims 13-19.

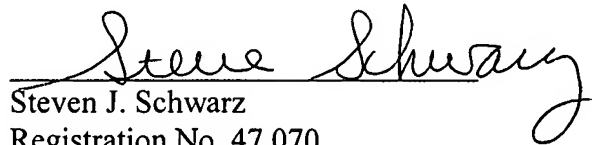
Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant, therefore, respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

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